

STATE OF VERMONT
PUBLIC SERVICE BOARD

Investigation into General Order No. 45)	
Notice filed by Vermont Yankee)	
Nuclear Power Corporation re: proposed)	Docket No. 6545
Sale of Vermont Yankee Nuclear Power)	
Station and related transactions)	

Prefiled Supplemental Testimony
in Support of the Memorandum of Understanding

of
William Sherman

on behalf of the

Vermont Department of Public Service

March 11, 2002

Summary: Mr. Sherman refers to his previous testimony and identifies the reasons for supporting the Memorandum of Understanding filed with the Board on March 6, 2002. He responds to certain questions from the Board, and comments on the Board's "Conclusions" for the original transaction described in Attachment A to its Order in Docket No. 6300 of November 17, 2000.

Testimony
of
William Sherman

1 Q. Please state your name and occupation.

2 A. My name is William Sherman, and I am an engineer with the Department of Public
3 Service ("The Department"). My responsibilities include oversight for the state of the activities
4 of the Vermont Yankee Nuclear Power Station and the nuclear power industry in general.

5

6 Q. Are you the same William Sherman who testified in this docket on behalf of the Department in
7 hearings on February 15, 2002.

8 A. Yes, I am.

9

10 **INTRODUCTION AND SUMMARY OF SUPPLEMENTAL TESTIMONY**

11 Q. What is the purpose of this supplemental testimony?

12 A. This supplemental testimony supports the Memorandum of Understanding among
13 Entergy Nuclear Vermont Yankee, LLC ("ENVY"), Vermont Yankee Nuclear Power
14 Corporation ("VYNPC"), Central Vermont Public Service Corporation ("CVPS"), Green
15 Mountain Power Corporation ("GMP"), and the Vermont Department of Public Service ("DPS"
16 or "the Department") ("the MOU") filed with the Board on March 6, 2002. This testimony

1 introduces the Department's Supplemental testimony which includes support of the MOU;
2 responses to certain Board questions; and information related to Attachment A to the Board's
3 Order in Docket No. 6300 of November 17, 2000 ("Board Attachment A"), the "Conclusion"
4 section of the order that the Board was prepared to issue on October 18, 2000.
5

6 Q. Please state the Department's overall conclusion regarding the proposed transaction.

7 A. The Department evaluates that, with the items identified in the MOU and the
8 clarifications in the petitioners' rebuttal testimony, the proposed transaction promotes the general
9 good of the state of Vermont. The Department recommends that the Board approve the
10 proposed transaction as modified by the MOU.
11

12 Q. Please state why you support the proposed transaction.

13 I support the proposed transaction for the following reasons:

- 14 1. The \$180 million purchase price represents a substantial bid from the high bidder
15 of the auction process (DPS witness Chernick, pfd at 22.) The fact that this purchase
16 price is sufficient to repay all of VYNPC's debt and a significant portion of VYNPC's
17 equity is valuable to Vermont consumers. This eliminates almost all of VYNPC residual
18 costs (i.e., depreciation and interest) which are present in the KEEP and SHUTDOWN
19 cases.

1 2. As described in witness Biewald's and my direct testimony, there is an expected
2 net present value ("NPV") benefit, albeit not a great benefit, to the sale for ratepayers and
3 consumers considering operation until 2012.

4
5 3. The risk of operation costs significantly higher than predicted is transferred to
6 ENVY. In addition as described in the "Financial Assurance Considerations" section
7 below, there is an important transfer of decommissioning risk.

8
9 4. The low market adjustment mechanism ("LMA") of the power purchase
10 agreement ("PPA") is a significantly beneficial hedge. The fixed prices through 2012
11 provides protection against higher than predicted prices. The LMA provides protection,
12 with a 5% premium, for lower than predicted prices. Item 14 of the MOU includes an
13 adjustment of the ICAP default value. While the default value of 110% remains, a clause
14 has been added to allow VYNPC and ENVY to mutually agree on a percentage which
15 accurately reflects the price of ICAP.

16 I agree with the analysis of petitioner witness Page that it is not economic to
17 change the effective date of the LMA to a date earlier than Fall 2005. For the reasons
18 described below in the "Consideration of the Shutdown Option" section, I do not believe
19 it is necessary for the LMA to begin earlier.

- 1
- 2 5. ENVY owners will consider actions potentially beneficial to Vermonters that
- 3 VYNPC owners currently claim they would not consider. I agree with Petitioner witness
- 4 Barkhurst that “restructuring of the Station’s ownership” is a benefit of the sale¹.
- 5
- 6 6. The MOU guarantees that, if ENVY renews Vermont Yankee’s operating license,
- 7 the current owners will have first rights to negotiate for Vermont Yankee power beyond
- 8 2012.
- 9
- 10 7. The MOU provides that, if ENVY renews Vermont Yankee’s operating license
- 11 and power costs after 2012 are greater than a set strike price, VYNPC will share 50% in
- 12 revenues above the strike price. While this strike price is set above the current highest
- 13 forecast in the case (DPS 2001), this excess revenue feature provides protection if power
- 14 costs are much higher than currently expected. This excess revenue sharing would occur
- 15 regardless of whether VYNPC or current sponsors purchase future power.

¹VYNPC witness Barkhurst stated at page 6 of his rebuttal testimony:

Simply put, without the restructuring of the Station’s ownership that the proposed sale to Entergy will allow, our customers will remain locked into a contract with a supplier that has a competitive disadvantage.

1 8. ENVY has committed for a CPG review at the Board for license renewal, and has
2 indicated it waives the possibility of arguing this CPG is preempted by federal regulation.
3 While, in my direct testimony, I have stated that loss of local control is a negative aspect
4 of the sale (and this negative aspect still exists with the proposed transaction), this CPG
5 for license renewal is an element of local control which is improved by the proposed
6 transaction. I believe the CPG process for license renewal will give the state the ability to
7 review the economic risks and benefits to the state for license renewal at the time of the
8 CPG request.

9
10 9. The MOU creates decommissioning reporting such that the Department and
11 Board can monitor the decommissioning fund performance on a semi-annual basis, and
12 the estimated decommissioning costs through a site-specific study every five years. This
13 decommissioning reporting will provide the state with the ability to monitor and take
14 appropriate action if issues arise related to ENVY's management of decommissioning
15 funding. In addition, the MOU has provisions to assure that all the decommissioning
16 fund is transferred in the sale, that changes to the trust agreement related to disbursement
17 of funds for non-decommissioning purposes must be approved by the Board, and that
18 excess decommissioning funds will be shared if completion of decommissioning is delayed

1 beyond 2022. I consider these decommissioning protections sufficient for the proposed
2 transaction.
3

4 10. Completing the proposed transaction will have the beneficial effect of making the
5 run/shutdown decision for Vermont Yankee a pure business decision based on movement
6 of the market. This will occur after 2005 when the LMA becomes effective. In other
7 words, if Vermont Yankee cannot compete in the market after 2005, ENVY will choose
8 early shutdown. This is a positive effect of changing Vermont Yankee to a market
9 competitor (granting exempt wholesale generator ("EWG") status and the ability to
10 charge market-based rates). For the reasons described below in the "Consideration of the
11 Shutdown Option" section, I do not believe it is necessary before 2005 to expose the
12 run/shutdown decision to market conditions. (I believe the negative effect of EWG status
13 described in my direct testimony (i.e., the possible effect of nuclear safety from
14 competitive pressure on operations funding) can be managed through the Inspection
15 Memorandum of Understanding which is included in the MOU.)
16

17 Q. Please summarize your conclusions regarding the analytical calculations regarding the NPV
18 benefit of the sale.
19

1 A. In order to summarize the analytical results for the case, there are two major variables
2 which require consideration: 1) variations in operational improvements and 2) variations in future
3 market price forecasts.

4 Regarding the general area of operational improvements, the petitioners in rebuttal
5 testimony have evaluated their base case in which the NPV benefit of the sale for operation until
6 2012 (the benefit of SELL over KEEP) is \$263 million (Page rebuttal pf at 9). The Department
7 has considered operational improvements which have a high probability of occurrence, given
8 moderate regulatory attention, such that using its base case, the NPV benefit of the sale is \$13
9 million (see my direct pf at 9). Despite the fact that the Department's assumptions have a high
10 probability of occurrence (refer to the section later in this testimony, "Discussion of Likely Keep
11 Case Options"), it is possible that some of the improvements included in the Department's
12 analysis may not occur because of choices to be made by the current owners. Therefore, I
13 believe the analyses done to date serve to adequately bracket the NPV benefit for the sale. There
14 will be a positive NPV benefit for the sale somewhere between \$13 million and \$263 million, in
15 2001 dollars. This is an NPV benefit range of \$250 million.

16 Regarding variations in future market price forecasts, the DPS 2001 forecast represents a
17 high estimate for the docket. The GMP 2002 (or the LaCapra) forecast represents a low
18 estimate. Future market price forecasts do not affect the comparison of KEEP versus SELL
19 through 2012 in any significant fashion. However, future market prices are important in

1 evaluating KEEP and SELL versus SHUTDOWN. I agree with petitioner witness Page's
2 evaluation of the effect of future market prices (see Page rebuttal pf at 9-12). Using the
3 petitioners' base case and comparing SELL with SHUTDOWN, the NPV benefit for SELL is
4 \$426 million with the DPS 2001 forecast and \$245 million for the GMP 2002 forecast (Id at 11).
5 In other words, the NPV benefit range between the two forecasts is \$181 million. I believe these
6 forecasts adequately bracket future possibilities.²

7 I have a further observation regarding the NPV benefit results for the proposed
8 transaction. As shown by the results identified above, the calculated NPV benefits can vary
9 greatly depending on various assumptions of future outcomes. The discussion above shows the
10 range of NPV benefits considering operational variations is \$250 million, while the range of NPV
11 benefits considering market price forecasts is \$181 million. In addition, in his rebuttal testimony
12 VYNPC witness Wiggett has simply added an additional \$81 million of costs to his previous
13 estimate of VYNPC costs with no backup other than what appears to be an estimate-

² An analysis of SELL versus SHUTDOWN has not been done comparing DPS 2001 and GMP 2002 forecasts with the Department's base case for the direct testimony. However, my prefiled direct testimony at 35 compares premature shutdown with the forecasts of record at the time of filing. I expect analysis with the GMP 2002 forecasts would reduce calculated SHUTDOWN costs somewhat. However, these results would not change our recommendation for the proposed transaction because of the reasons stated in the "Consideration of the Shutdown Option" section of this testimony.

1 methodology anomaly (Wiggett rebuttal pf at 8)³. Because of these wide swings, the Board
2 should place only limited weight on any specific analytical result as a decision determinate.

3 For my consideration, the analysis provided to date is sufficient to illustrate that a
4 positive NPV benefit exists somewhere in the ranges provided, and that the proposed transaction
5 should be found to promote the general good of the state for the reasons I have enumerated
6 earlier in this testimony.

7
8 Q. In your direct testimony you indicated, at 8, that a major concern which must be clarified,
9 resolved or conditioned for the sale to promote the general good of the state of Vermont was: "If
10 Vermont Yankee's license is renewed for operation beyond 2012, Vermonter's must have the
11 benefit of a long-term, economically-attractive power supply in exchange for hosting the nuclear
12 plant all of these years." Please describe how the MOU addresses this concern.

13 A. The MOU addresses this concern in three ways. First, access to power supply for power
14 beyond 2012 is provided through the right of first negotiation included in the MOU. Second,
15 excess revenue sharing will occur if market prices exceed a strike price which begins at \$61 per

³ Mr. Wiggett's statement is: "[Capital costs are increased] by \$81,053,000 in nominal dollars, representing significant budget increases in 2002 through 2004 for the main transformer replacement and generator rewind in addition to security enhancements. Beyond 2004, we estimate capital additions on a three-year moving average, beginning with the 2002-2004 period. Since the capital expenditures budgeted for the 2002-2004 period increased substantially over earlier projections, the years beyond 2004 are also forecast to have higher capital requirements." I also note that VYNPC is asking the Board to accept this analytical change while ignoring its obligation to supplement discovery responses regarding capital costs - specifically DPS discovery requests 1-28, 1-29, 1-55, 2-11 and 2-18, in which we tried to understand the value of VYNPC capital expenditures.

1 MWH in 2012, regardless of whether or not current sponsors purchase license renewal power.
2 This provides upside protection if future market prices are higher than predicted in the future.
3 Third, the firm commitment for seeking a CPG from the Board from license renewal allows the
4 Board to review whether Vermonter's will have sufficient benefit from continued operation, such
5 as a long-term, economically-attractive power supply, in exchange for hosting the nuclear plant
6 during the license renewal period. These provisions satisfy the concern identified in my direct
7 testimony.

8
9 Q. In your direct testimony you indicated, at 8, that another major concern which must be clarified,
10 resolved or conditioned for the sale to promote the general good of the state of Vermont was:
11 "There must be assurance that economic risks are, indeed, transferred as evidenced by
12 appropriate financial guarantees and corporate structure. The financial assurance issues
13 identified by Witness Crane must be resolved."

14 A. The MOU satisfies this concern as described in the supplemental testimony of DPS
15 witness Crane and also as described in the section below, "Comments on Financial Assurance."
16

17 Q. In your direct testimony you identified, at 12, a list of eleven Additional Conditions which you
18 recommended the Board apply if it finds the sale promotes the general good of the state. Please
19 comment on these Additional Conditions.

1 A. All of the Additional Conditions identified at 12 of my direct testimony are satisfactorily
2 addressed in the MOU.

3

4 **COMMENTS ON FINANCIAL ASSURANCE**

5 Q. Please comment on the financial guarantee provided by the MOU.

6 A. The financial guarantee provided by Entergy Corporation and ENVY in the MOU and
7 the proposed transaction provides adequate assurance that the risks associated with Vermont
8 Yankee are adequately transferred⁴. The MOU includes Exhibit B (to the MOU), a letter from
9 Entergy Corporation to Vermont Yankee guaranteeing the availability, through credit
10 agreements with two subsidiaries, of a minimum of \$60 million. This parental guarantee of \$60
11 million will be available at the time ENVY elects to permanently cease Vermont Yankee
12 operations, regardless of the amounts used previously on subsidiary credit agreements, and the
13 parental guarantee remains in force until ENVY will have access to at least 20% of the

⁴ In this proceeding I have talked about whether "the proposed transaction provides adequate assurance that the risks associated with Vermont Yankee are adequately transferred." By using this phraseology, I do not mean to suggest that if the sale were approved and closed, the risks associated with operation and decommissioning would not be transferred as a legal matter to ENVY. The issues addressed by this short-hand expression are whether ENVY has the financial strength and integrity to meet all its obligations related to owning and operating the plant, e.g. whether ENVY can meet its responsibilities to operate the plant safely, shut it down if necessary and decommission it.

1 decommissioning trust fund⁵. To explain the adequacy of the financial guarantee, I would
2 discuss two cases - costs during operation and costs associated with decommissioning.
3

4 Q. What are the financial assurance considerations for costs during operation?

5 A. In the original proposal, ENVY presented a \$35 million working capital credit agreement
6 with Entergy Global Investments, Inc. ("EGI") and a \$35 million financial assurance credit
7 agreement with Entergy International Holdings Ltd., LLC ("EIHL"). ENVY stated its primary
8 intention to use the EGI agreement for working capital, but that if conditions required, it could
9 even use the EIHL agreement prior to shutdown. We were concerned that ENVY might
10 encounter a situation where it had used the funding from these credit agreements before making
11 the decision to permanently close, such that insufficient funds would be available to gain access
12 to the decommissioning fund. However, now Entergy Corporation guarantees sufficient funds in
13 order to gain access to the decommissioning fund, regardless of whether the previous credit
14 agreements were used.
15

16 Earlier, witness Crane and I testified that financial assurance to allow funding of
17 operating costs for a one-year period would be appropriate. However, the parental guarantee in

⁵ Exhibit B specifies that the guarantee will remain in effect until such time as "ENVY has submitted to the NRC the certification required by 10 CFR 50.82(a)(1) that the fuel has been permanently removed from the reactor vessel of VY and ninety (90) days have passed since the NRC has received the post-shutdown decommissioning activities report ("PSDAR")." 10 CFR 50.82 indicates that, once these requirements are met, licensees may have access to 20% of the decommissioning trust fund.

1 the MOU provides sufficient funding to gain access to the decommissioning fund once the
2 decision is made to permanently close the plant. Therefore, this one-year duration is no longer
3 necessary⁶.

4 In addition, as stated below, NRC is responsible for financial assurance, and in the event
5 of ENVY default the federal government will take action under the Atomic Energy Act to
6 provide necessary funding to ensure public health and safety is not jeopardized. Therefore, the
7 financial assurance provided by the MOU and proposed transaction is adequate for costs during
8 operation.

9
10 Q. What are the financial assurance considerations for costs during decommissioning?

11 A. I consider the financial assurance as adequate for costs during decommissioning for the
12 reasons explained below. This adequacy is based on the transfer of decommissioning
13 responsibility to ENVY, and the NRC's responsibility for financial assurance in granting the
14 NRC operating license transfer from VYNPC to ENVY.

15
16 During the direct hearings, the Board asked several witnesses about apparent differences
17 between VYNPC's *operating* costs for early shutdown and the *decommissioning* costs that
18 ENVY might incur. On Exhibit VY-BW-6, VYNPC identified *operating* costs of approximately

⁶ The \$60 million parental guarantee, which is not increased with inflation, is roughly equivalent to six- months' operating costs at the time of closing.

1 \$70 million per year from 2004 to 2011 for a premature shutdown in 2002. These costs are
2 roughly evenly distributed between two costs, 1) the costs to recover unamortized investment -
3 debt and equity, and 2) payments to the decommissioning fund to accomplish prompt
4 dismantlement in 2002. For premature shutdown under ENVY ownership, neither of these costs
5 would accrue to ratepayers. The unamortized VYNPC investment will be paid off (substantially)
6 by the \$180 million purchase price. ENVY would not incur either of these costs. Unrecovered
7 portions of its \$180 million purchase price would become a loss to Entergy Corporation. And
8 for the decommissioning fund, ENVY does not anticipate making payments, but rather allowing
9 the fund to grow through investment returns during delayed decommissioning.

10 Therefore, the question to consider is, how great is the shortfall in the decommissioning
11 fund, and what delay period may be necessary. For various scenarios of ENVY ownership and
12 shutdown in 2012, as provided previously in workpapers, I calculated decommissioning fund
13 shortfalls between \$100 million and \$200 million (in 2012 dollars). For these scenarios, I
14 calculated the fund would grow by investment returns such that dismantling could begin between
15 2020 and 2026.

16
17 Is it possible that ENVY, faced with a \$100 million to \$200 million decommissioning
18 shortfall and no financial guarantee in the decommissioning period, might choose bankruptcy as a
19 commercially preferable option? Maybe. However, if it did, I understand from the Goodwin
20 Proctor LLP legal memorandum (Exhibit ENVY-Wells-3), that NRC and the federal government

1 would be responsible 1) for managing decommissioning in a manner to protect public health and
2 safety, and 2) for providing necessary funds to accomplish the decommissioning task⁷.

3 Therefore, the risks associated with costs from default during decommissioning are adequately
4 transferred from ratepayers to the federal government, and public health and safety will be
5 managed by the NRC⁸.

6
7
8
9
10
11 **CONSIDERATION OF THE SHUTDOWN OPTION**

12 Q. In considering the proposed transaction, the possibility of premature shutdown by the current
13 owners has been evaluated. Do you believe the Board has sufficient information regarding

⁷ It is debatable whether NRC should require greater financial assurance in granting the transfer of the NRC license to a non-utility entity like ENVY. If any non-utility entity were to default, I am certain NRC would expeditiously change its policies to require greater financial assurance for the decommissioning period for any other non-utility licensees. It is not debatable, however, that NRC is responsible for assuring the financial ability of the licensee and is therefore assuming the risk of default for the federal government.

⁸ Responding to rebuttal testimony, this conclusion is a refinement of the statement in my prefiled direct testimony at 53 in which I stated, "I do not consider the transfer of decommissioning risk to be a significant factor in the sale." The transfer of the decommissioning risk from ratepayers to the federal government *in the event of ENVY default* is a positive factor for the sale.

1 premature shutdown with which to determine whether the proposed transaction promotes the
2 general good of the state?

3 A. Yes.

4 Q. Do you believe that relinquishing the Board's local control that currently exists to effect an
5 economically preferable premature shutdown (i.e., an economically-determined shutdown) of the
6 plant will be detrimental to the general good of the state?

7 A. No.

8 Q. Do you believe that the proposed transaction should be found to promote the general good of
9 the state even if there are some analyses which indicate the premature shutdown may be
10 economically preferable or near economically preferable?

11 A. Yes.

12
13 Q. Please explain these answers.

14 A. Ultimately, the regulatory objective is for the market to determine whether Vermont
15 Yankee should operate or close prematurely. I will show in this explanation that this regulatory
16 objective is met at the earliest reasonable time by approval of the sale to ENVY.

17 In rebuttal testimony, CVPS witness Page has provided analyses of premature shutdown
18 in 2002 using Vermont Yankee assumptions with a number of forecasts of future market prices
19 (see Page rebuttal pf at 9-12). In Exhibit DPS-WKS-8, at the Board's request, I also provided
20 analysis of 2002 shutdown with a number of forecasts of future market prices (but not including

1 GMP 2002 and CVPS 2002, which were provided after Exhibit DPS-WKS-8 was prepared).
2 Using the lowest market forecasts (GMP's forecasts), both Mr. Page's and my analysis show that
3 SHUTDOWN in 2002 is preferred to the KEEP - OPERATE case, but the SELL case is
4 preferred over SHUTDOWN in 2002.

5 Even if SHUTDOWN in 2002 were shown to be the preferred option by the lowest
6 forecasts, I would not recommend that action for the Board. First, earlier in this testimony, I
7 mentioned the imprecision of the NPV benefit calculations of the types we are considering here.
8 Second, the electric energy market is volatile. The ISO-New England average market-clearing
9 price for wholesale electric energy (for all hours) for January 2001 was \$62.57 per MWH. The
10 corresponding clearing price for January 2002 was \$25.49 per MWH. Even though the newest
11 forecasts are lower than before, there is no guarantee that unconsidered circumstances (as those
12 listed by VY witness Keane, rebuttal pf at 13 - 15) won't cause higher future prices than
13 currently forecast. For this reason, I would not recommend an economically-determined
14 shutdown until at least two or three years of actual clearing prices demonstrated that energy
15 costs were really going to be low enough for premature shutdown. Third, premature shutdown
16 in 2002 would not really be desirable because of the lack of preplanning. An economically-
17 determined shutdown should be planned such that new nuclear fuel for the next refueling outage
18 is not ordered. In addition, the PSDAR should be prepared and filed at least 90 days before
19 shutdown in order to reach the decommissioning fund as soon as possible. Given these criteria
20 (i.e., sustained low energy prices, avoided new fuel order, and pre-prepared PSDAR), the earliest

1 dates for an economically-determined shutdown would be either at the Spring 2004, or more
2 likely the Fall 2005 refueling outages, depending on how long it would take to prepare the
3 PSDAR.

4 The Fall 2005 refueling outage, which most likely is the earliest date to implement an
5 economically-determined shutdown of Vermont Yankee, is also the date the LMA of the PPA
6 would begin to be applied under ENVY ownership. If the market prices are low enough for
7 considering an economically-determined shutdown with VYNPC ownership, then energy prices
8 for Vermont Yankee power with ENVY ownership will follow the market with a small premium
9 after the Fall 2005. After Fall 2005, it would be my expectation that ENVY would choose
10 shutdown if indeed it was directed by the market. I don't consider it necessary for the LMA to
11 become effective before Fall 2005, because I don't believe we should consider an economically-
12 determined shutdown before that time, at any event.

13 With regards to early shutdown, the provisions of the proposed transaction provide a
14 near optimum result. The Department wants the market to determine whether Vermont Yankee
15 operates or closes. After the Fall 2005 refueling outage, Vermont Yankee under ENVY
16 ownership will be exposed to the market because of the LMA and the market will determine
17 Vermont Yankee's future. Since it is unlikely that the necessary pre-planning for planned
18 shutdown could occur before Fall 2005, the sale to ENVY will create the desired regulatory
19 result of having the market determine operation or shutdown at the earliest reasonable time.
20

1 **DISCUSSION OF LIKELY KEEP CASE OPTIONS**

2 Q. In the hearing on February 15, 2002, the Board asked the Department to identify operational
3 improvements assumed in its KEEP analysis which have a high probability of occurring. Tr 02-
4 15-02 at 114-115. Please list the operational improvements you will discuss.

5 A. In our direct case KEEP analysis we made the following assumptions that I will discuss:

- 6 • Power uprate at 13%
- 7 • The possibility of license renewal
- 8 • Receipt of spent nuclear fuel damages from the U.S. Department of Energy
- 9 • Reduction of VYNPC predicted 2012 O&M costs by \$55 million
- 10 • Reduction of O&M costs by \$3 million and \$5 million in refueling and non-
11 refueling years, respectively
- 12 • Cease decommissioning collections after 2002

13

14 Q. Please explain whether you believe these operational improvements have a high probability of
15 occurring if the current sponsors retain ownership of the plant.

16 A. All of the operational improvements listed have a high probability of occurrence. The
17 Department's philosophy in evaluating this transaction has been to provide an accurate estimate
18 of the improvements that current owners can make, in order to provide the Board with an
19 accurate comparison of current Vermont Yankee value which is being given up by the
20 transaction. Any attempt to portray the results of these improvements as hypothetical,

1 unachievable results should be rejected. It is true that current sponsors claim now that these
2 improvements, either in full or in part, would not or could not be pursued under current
3 ownership. However, I demonstrate below that a reasonable manager and director would choose
4 to pursue each of these improvements. Therefore, with a moderate amount of regulatory
5 attention, each of these improvements has a high probability of occurring under current
6 ownership.

7
8 Q. Do you consider a 13% power uprate likely?

9 A. Yes. Petitioners' witnesses Keane, Brown and Barkhurst, all VYNPC Board members,
10 testify in rebuttal testimony that the Board would not approve power uprate in the KEEP case.
11 Mr. Keane, as an out-of-state director, specifically states his belief that out-of-state directors,
12 who hold a one-member majority on the VYNPC Board, would not vote for power uprate. I
13 do not believe that Mr. Keane's statement of intentions for out-of-state directors represent the
14 actions a reasonable director would take, for the following reasons. First, to the best of my
15 knowledge, each out-of-state sponsor bears the responsibility for mitigation of stranded costs in
16 its respective state. Implementing power uprate is a clear method of stranded costs mitigation -
17 the uprate power can be sold at a cost clearly higher than its development cost, with the
18 difference applied to stranded cost mitigation. Second, the testimony of Messrs. Keane, Brown
19 and Barkhurst demonstrate lack of creativity. For example, if out-of-state sponsors would be
20 unwilling to support power uprate, would they support a proposal that in-state sponsors pay all

1 costs and receive all benefits of the uprate? A reasonable in-state director and manager would
2 have explored this option. Therefore I believe that, using the local regulatory control that exists
3 under current ownership, the current sponsors would realize that pursuit of power uprate was the
4 correct choice, and they would pursue it.

5
6 Q. Do you consider the possibility of license renewal as likely?

7 A. Yes, for the same reasons described in the preceding answer. However, I would add one
8 caveat. I believe the real outcome for license renewal in the KEEP case will be dependent on the
9 economics which develop in the next five years. If the costs from the DPS 2001 forecast were to
10 occur, it would be difficult for sponsors to forego license renewal. On the other hand, if costs
11 like the GMP 2002 forecast were to occur, license renewal would most likely not be cost
12 effective.

13
14 Q. Do you consider receipt of spent nuclear fuel damages from the U.S. Department of Energy
15 (“DOE”) to be likely?

16 A. Yes, I consider the probability of receipt of damages from DOE to be 100%, based on
17 the court cases cited in my direct testimony and the PECO settlement entered as Exhibit CVPS-
18 5. In considering what percentage of overall damages to use for analysis, I use the PECO
19 settlement as proxy. The allowable costs in the PECO settlement are comprehensive, including
20 but not limited to storage slab, bridge and retaining walls; security system at the independent

1 spent fuel storage installation (ISFSI); security system at the protected area boundary; spent fuel
2 pool modifications; inside plant modifications; ISFSI project access road; procurement of spent
3 fuel storage casks and associated equipment; and road bridges. Considering this is a first
4 settlement which is a trial balloon for DOE, it is likely future settlements will be as good, if not
5 better. In other words, this settlement will be the baseline. Therefore, it is not unreasonable to
6 consider 100%, or something very nearly 100% for DOE damages⁹.

7 Q. Do you consider reduction of VYNPC's predicted 2012 O&M costs by \$55 million to be likely?

8 A. Yes. A reasonable manager would use existing staff members, who are normally
9 preparing for the next refueling outage and who are working on forward-looking operating
10 projects, to prepare the post shutdown decommissioning activities report (PSDAR) prior to
11 shutdown. This reasonable manager would take advantage of pre-filing and pre-approving the
12 PSDAR with NRC, and also would pre-plan the unloading of spent fuel from the reactor.
13 Finally, a reasonable manager would coordinate personnel transitions and terminations to
14 minimize costs to consumers. These actions would allow, within the limits of accuracy of the
15 forecast of 2012 expenses, the reduction of \$55 million that we have assumed.

⁹ Witness Wiggett is just wrong in his rebuttal testimony at 12-13. The dispute is not whether receipt of DOE damages will occur, but rather how much it will be. While it is understandable that DOE damages may not meet the known-and-measurable standard for an analysis to set current rates, a reasonable manager would have included some best estimate of DOE damages in a long-term forecast to compare KEEP with SELL for the proposed transaction because of their 100% probability of occurrence.

1 Q. Do you consider reduction of O&M costs by \$3 million and \$5 million in refueling and non-
2 refueling years, respectively, to be likely?

3 A. Yes. For the reasons stated in witness Schlissel's prefiled direct testimony at 15 -24, and
4 for the fact that in 2001, Vermont Yankee was *\$21 million under its projected budget*, as stated
5 by witness Biewald at 22 of his prefiled direct testimony. In addition, in VYNPC witness
6 Wiggett's rebuttal testimony at 14, he essentially signals agreement with this Department
7 assumption with the statement, "Vermont Yankee does believe it can do better in the future and
8 has already included projected savings in Exhibit VY-Wiggett-9 Revised."

9
10 Q. Do you consider ceasing decommissioning collections after 2002 to be likely?

11 A. Yes. The "cease-collections" assumption was chosen for the reasons stated in my
12 prefiled direct testimony. Implementing this zero-collection rate has a high probability of
13 occurrence for the reasons stated in my cross examination in the direct case. Tr 02-15-02 at
14 170-174. The key to reaching the zero-collection rate is the willingness to consider SAFSTOR
15 (delayed decommissioning) beyond 2012, the end of the current operating license¹⁰. At this time,
16 VYNPC represents that it would not agree with the zero-collection rate. However, when

¹⁰ While the Department may not have moved to advocate SAFSTOR past 2012 on its own, we would advocate SAFSTOR now because of the actions of VYNPC in recommending the proposed transaction. In the proposed transaction, ENVY relies on SAFSTOR to accomplish decommissioning. VYNPC, by being co-petitioner in this docket, has broken the seal, as it were, to allow the decommissioning assumption of SAFSTOR past 2012. There is nothing wrong with choosing SAFSTOR past 2012.

1 presented with the need to implement least cost integrated planning, I believe VYNPC would
2 come to see the value in choosing an assumption of SAFSTOR past 2012¹¹.

3 In addition, in workpapers filed previously, I identified my best estimate of the cost of
4 VYNPC decommissioning as \$405 million (in 2001 dollars). For this decommissioning cost and
5 a zero-collections rate implemented after 2002, I calculated that investment returns will result in
6 fund growth such that dismantling decommissioning can be started in 2012 without the need for
7 delay.

8 **PRUDENCE AND USED AND USEFUL CONSIDERATIONS**

9 Q. Please summarize the prudence and used and useful requests in proposed transaction and the
10 recommendations in the MOU.

11 A. The petitioners have asked that prudence and used and useful determinations be given in
12 the approval of the proposed transaction and have structured the Purchase and Sales Agreement
13 (“PSA”) so that any party can terminate the agreement if these determinations are not given.
14 The MOU in item 15 recommends that the Board should issue findings that treat the proposed
15 transaction described in the PSA and the MOU as if they were prudent as to all decisions and

¹¹ One of the oddest aspects of this docket is the rebuttal testimony of VYNPC witnesses Wiggett at 19 and Cloutier at 12. They seem to be saying that the plan to SAFSTOR and allow the decommissioning fund to grow by investment returns is not a valid plan, while at the same time they are proposing that the Board approve the proposed transaction in which ENVY states it will employ just that plan to SAFSTOR. These witnesses have adequate credentials and should be able to provide the Board useful information. However, based on my review and understanding of the issue, I conclude they are just not credible in these statements. At any rate, I rely on the reasons stated in the “Comments on Financial Assurance” section of this testimony in recommending approval of the sale.

1 actions taken by the petitioners prior to the close of evidence in this docket and which were
2 reviewed by the Board in this docket, and that the purchase of capacity and energy in this
3 transaction as if it were used and useful for the term of the PPA and Amendatory Agreements.
4 Such rulings should not be made lightly. Because of the specific circumstances of this case, I
5 recommend the Board approve item 15 of the MOU.
6

7 Q. Please describe why you recommend that the purchase of capacity and energy in this transaction
8 should be treated as if it were used and useful for the term of the PPA and Amendatory
9 Agreements.

10 A. There are two parts for this recommendation for treatment as if it were used and useful.
11 First, the energy from Vermont Yankee is controlled by FERC regulation under the Power
12 Contracts and Additional Power Contracts, and these contracts have controlled the purchase of
13 VYNPS power since 1972. Other plants in the "Yankee" group (Yankee Rowe, Connecticut
14 Yankee and Maine Yankee) have prematurely shutdown and the FERC has directed that costs be
15 recovered over the planned full-term life of these plants. Therefore, based on this FERC history,
16 it appears that there would be significant barriers to any effort to reverse that history, and that
17 power associated with these Power Contracts and Additional Power Contracts is effectively
18 being treated as if it were used and useful. Given this FERC history, treating the proposed
19 transaction as if it were used and useful in the SELL case retains the basic status quo of the
20 KEEP case.

1 However, this leaves open the question of whether the used and useful test should be
2 applied in the future because sponsors could have used this opportunity to execute a shorter-
3 term power purchase contract or a different power contract. The LMA of the PPA is important
4 in resolving this question. I have shown in the "Consideration of the Shutdown Option" section
5 of the testimony that an economically-determined shutdown would not likely occur before Fall
6 2005. Therefore, I would consider the proposed transaction up to Fall 2005 as if it were used
7 and useful. After Fall 2005, if market prices were low enough to cause a used and useful
8 consideration, the LMA would adjust PPA prices to follow the market with a slight premium.
9 Therefore, I would also consider the proposed transaction after Fall 2005 as if it were used and
10 useful.

11
12 Q. Please describe why you recommend that the proposed transaction described in the PSA and the
13 MOU should be treated as if they were prudent as to all decisions and actions taken by the
14 petitioners prior to the close of evidence in this docket and which were reviewed by the Board in
15 this docket.

16 A. The PSA and the MOU should be treated as if they were prudent as to all decisions and
17 actions taken by the petitioners prior to the close of evidence in this docket and which were
18 reviewed by the Board in this docket because the proposed transaction promotes the general
19 good of the state for the reasons enumerated earlier in this testimony. In other words, the
20 proposed transaction is a good transaction and there are compelling reasons for it to be

1 approved. Therefore, regardless of the manner and methods by which the transaction has been
2 presented, the proposed transaction should be treated *as if* it were presented prudently.
3

4 **COMMENTS OF BOARD ATTACHMENT A**

5 Q. Please describe Board Attachment A.

6 A. In the Order in PSB Docket No. 6300 of November 17, 2000, the Board attached its
7 draft "Conclusion" section of an order that the Board was prepared to issue on October 18, 2000
8 ("Board Attachment A"). This draft order would have denied the proposed transaction because
9 it had not been demonstrated that the proposed transaction provided an economic benefit to the
10 state of Vermont, or that the price AmerGen would pay reasonably reflected the market value of
11 Vermont Yankee. Board Attachment A continues with eight bullet items which it identifies as
12 significant factors in reaching these conclusions.
13

14 Q. What is your comment regarding the Board's conclusions?

15 A. As explained below, the reasons the Board would have denied the proposed transaction
16 are addressed by the adjusted financial transaction. The proposed transaction in this Docket
17 results in a benefit for Vermonters, as enumerated previously in this testimony.
18

19 Q. What is your comment regarding the Board Attachment A, Bullet No. 1?

20 A. Bullet No. 1 states:

1 C The proposed transaction provides, at best, a marginal improvement in economic value for
2 Vermont ratepayers. Merely by incorporating more likely estimates of future market costs for
3 power and decommissioning expenses, these modest benefits become negative.

4 As describe above, consideration of a range of operational improvements and market
5 price forecasts show an NPV benefit for the transaction. However, the Board should not place
6 its greatest weight on the economic analyses but rather on the considerations of risk transfer,
7 price hedging, and exposure of the plant to market forces after 2005, which the transaction
8 provides.

9
10 Q. What is your comment regarding the Board Attachment A, Bullet No. 2?

11 A. Bullet No. 2 states:

12 C As a condition of the sale, the Vermont Sponsors would have to enter into a 12-year contract to
13 purchase power from AmerGen. The price of the power over that same period is \$104 million in
14 excess of what Vermont ratepayers would face under AmerGen's own estimate of the power
15 market (as measured by an arms-length sale between AmerGen and its affiliate PECO).

16 In general it is not useful to consider a comparison of power prices without considering
17 the economics of the whole transaction. In the proposed transaction, Vermonters benefit greatly
18 by having \$180 million in hand at the closing of the sale. The PPA and low-market adjuster in
19 this transaction provide ratepayer protection whether market prices are higher or lower. As
20 described above, early shutdown would not be considered before 2005 in any event. The PPA
21 with low-market adjustment is a significant positive aspect of the sale.

1 Q. What is your comment regarding the Board Attachment A, Bullet No. 3?

2 A. Bullet No. 3 states:

3 C The power contract, in addition to being overpriced, is structured so that the greatest economic
4 benefit occurs in the later years. However, AmerGen retains the option to close Vermont
5 Yankee at any time with no liability, thereby leaving the Vermont Sponsors locked into the
6 contract during the early years, when it is most overpriced, with no assurances that they will
7 receive power in the later years.

8 By the Department's estimates, the power contracts are not overpriced. However,
9 argument over whether the power contracts are overpriced is made moot by the low-market
10 adjustment mechanism, which guarantees the lower of the PPA price or the market price with a
11 small premium.

12 For the proposed transaction, the statement, "the greatest benefit occurs in the later
13 years," would represent a misunderstanding of the way the economics of the transaction work.
14 The greatest benefit of the transaction occurs at closing when Vermonters share in the \$180
15 million purchase price. If this statement were made, it would relate to a comparison of power
16 prices apart from other aspects of the transaction. This type of comparison would be of no
17 useful value since it would ignore the substantial purchase price provided at closing.

18
19 Q. What is your comment regarding the Board Attachment A, Bullet No. 4?

20 A. Bullet No. 4 states:

21 C If we approved the Power Purchase Agreement, when combined with existing power
22 commitments, more than 75 percent of the Vermont Sponsors' power would come from long-
23 term, fixed-price arrangements, precluding the chance to reduce Vermont's current high reliance

1 upon such large, long-term commitments. This high commitment hampers the ability of
2 Vermont's utilities to participate actively in the emerging power market and continues to lock-in
3 a high percentage of the state's energy load to above-market price contracts.

4 The SELL case does not altar the Vermont Sponsors' exposure to the emerging power
5 market that already exists in the KEEP case. Furthermore, Vermont ratepayer interests are more
6 protected by assuring the beneficial power costs than by "participat[ing] actively in the emerging
7 power market". The proposed transaction provides beneficial power costs, whether future
8 power costs are high or low. The PPA in this docket cannot be described as a "fixed-price
9 arrangement." This is a better outcome than betting and hoping that emerging power markets
10 will be lower and therefore beneficial. Therefore, the proposed transaction supports a positive
11 conclusion on this factor.
12

13 Q. What is your comment regarding the Board Attachment A, Bullet No. 5?

14 A. Bullet No. 5 states:

15 C While the transaction will reduce the Vermont Sponsors' exposure to the costs arising from
16 extended outages or increase in operating costs, these risks do not appear so significant as to
17 outweigh the transactions' negative elements. In the event of outages, the transaction does
18 nothing to shield Vermont ratepayers from the need to replace plant output with other power.

19 This Board factor recognizes the risk reduction benefit of the proposed transaction.
20 Regarding the cost effect during outages, the proposed transaction is beneficial for the following
21 reason. The transaction does nothing to alter the status quo regarding the cost of replacement
22 power. Under VYNPC ownership and under the proposed transaction, Vermont sponsors must

1 find and pay for replacement power during both planned and unplanned outages. However,
2 under VYNPC ownership, ratepayers pay all Vermont Yankee's overhead costs during outages.
3 In the proposed transaction, there would be no charges for any station costs during outages.

4 As I have shown above, the "negative elements" referred to in this item are now positive
5 with the proposed transaction in this docket. The risk reduction referred to by this factor
6 contributes to the value of the sale.

7
8 Q. What is your comment regarding the Board Attachment A, Bullet No. 6?

9 A. Bullet No. 6 states:

10 C The transaction has the benefit of transferring some of the risks associated with decommissioning
11 Vermont Yankee to AmerGen. Increased knowledge of nuclear plant decommissioning has,
12 however, greatly reduced this risk, and instead suggests a downward trend in such costs. Thus,
13 this benefit does not outweigh the other, adverse, aspects of the transaction.

14 This Board factor recognizes the risk reduction in decommissioning. The "other, adverse
15 aspects of the transaction" are considered to be positive aspects in this docket. The risk
16 reduction referred to by this factor contributes to the value of the sale. In addition, the proposed
17 transaction includes the possibility of license renewal, giving more time for the decommissioning
18 fund growth, but it also may include accepting delayed decommissioning (SAFSTOR) if license
19 renewal does not occur.

20
21 Q. What is your comment regarding the Board Attachment A, Bullet No. 7?

1 A. Bullet No. 7 states:

2 C The transfer of Vermont Yankee also relinquishes the valuable option now held by the Vermont
3 Yankee Sponsors to close Vermont Yankee for economic or other reasons.

4 Arguments regarding whether there is value in the “option now held by the Vermont
5 Yankee Sponsors to close Vermont Yankee for economic or other reasons,” and the amount of
6 this “value,” are made moot by the proposed transaction.

7 Vermont Yankee Sponsors might choose to close Vermont Yankee under two scenarios.
8 Closure might be chosen if plant costs were high (equipment failure, unexpected outage). In this
9 case, the proposed transaction is better because ratepayers are shielded both from the higher
10 plant costs and from the costs of early decommissioning.

11 Closure might be chosen because low market costs made closing economical. The
12 proposed transaction is better for ratepayers. If ENVY chooses early closure, ratepayers benefit
13 by the low market prices which caused the closure, and they are shielded from the costs of early
14 decommissioning. If ENVY chose to continue operation in these low-market conditions,
15 ratepayers are protected by the low-market adjustment mechanism. From these statements, it
16 can be seen that the proposed transaction makes Vermont ratepayers economically indifferent to
17 whether Vermont Yankee continues to operate or closes prematurely.

18 See also the section provided earlier in this testimony, “Consideration of the Shutdown
19 Option.” Thus, the proposed transaction supports a positive conclusion on this factor.

20

1 Q. What is your comment regarding the Board Attachment A, Bullet No. 8?

2 A. Bullet No. 8 states:

3 C Approval of the transactions would require the Board to guarantee rate recovery for the
4 Vermont Sponsors. Such an Order would require the Board to waive long-standing protections
5 to ratepayers designed to ensure that companies operate in a reasonable manner. The Board
6 would consider granting such relief to the extent permitted by law only if a party could
7 demonstrate clear and compelling public benefits. Petitioners did not make such a showing.

8 For the clear and compelling benefits enumerated earlier in this testimony, the Board
9 should treat the proposed transaction as if it were prudent and used and useful. The proposed
10 transaction now supports a positive conclusion on this factor.

11

12 Q. What is your overall comment regarding the Board Attachment A?

13 A. Board Attachment A reflected the Department's position and evaluation of the original
14 transaction in Docket No. 6300. In the attachment, the Board stresses that "some future sale of
15 Vermont Yankee under different terms and conditions might well be reasonable and
16 appropriate." The proposed transaction in this docket has accomplished that which the Board
17 envisioned. It has created terms and conditions which are reasonable and appropriate, and
18 should be determined to promote the general good of the Vermont.

19

20 Q. Does this conclude your testimony?

21 A. Yes, it does.

22